Practice: 484 - Mulching

Scenario: #1 - Natural Material, Vegetation Establishment

Scenario Description:

Application of straw mulch or other state approved natural material to reduce erosion and facilitate the establishment of vegetative cover. Mulch provides a minimum of 70% ground coverage on a disturbed site around a newly constructed structural practice and is generally used with critical area planting.

Before Situation:

Typical scenario ranges from a 0.1 to 1.0 acre disturbed site around a newly constructed structural practice. The potential for soil erosion is high and mulch is needed to stabilize the soil and facilitate the establishment of vegetative cover.

After Situation:

Straw mulch has been applied to areas needing mulch. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established.

Associated Practice: 342 Critical Area Planting

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $305.26 **Scenario Cost/Unit:** $305.26

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$23.74	1	$23.74
Mulcher, straw blower	1305	Straw bale mulcher/blower to mechanically spread small or large straw bales. Labor not included.	Hour	$46.07	1	$46.07
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$22.08	1	$22.08
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	$118.54	1.8	$213.37

Practice: 484 - Mulching

Scenario: #2 - Erosion Control Blanket, Vegetation Establishment

Scenario Description:

Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of coconut coir, wood fiber, or straw and is typically covered on both sides with polypropylene netting. Used to help control erosion and establish vegetative cover on a disturbed site around a newly constructed structural practice and is generally used with critical area planting.

Before Situation:

There are areas of concentrated flow and a grassed waterway is being installed. Soil erosion is a concern and there is little to no vegetation.

After Situation:

The erosion control blanket is placed on concentrated flow areas and secured with ground stables. Soil erosion is minimized and vegetative cover is established.

Associated Practice: 342 Critical Area Planting

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $7,340.16 **Scenario Cost/Unit:** $7,340.16

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	$37.64	8	$301.12
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.32	32	$650.24
Materials						
Erosion Control Blanket, biodegradable	1213	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials and shipping only.	Square Yard	$1.20	5324	$6,388.80

Practice: 484 - Mulching

Scenario: #3 - Erosion Control Blanket for Endangered Species, Vegetation Establishment

Scenario Description:

Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of straw fiber and is typically covered on both sides with biodegradable netting (Leno woven on top net). Used to help control erosion and establish vegetative cover on a disturbed site around a newly constructed structural practice, while preventing entanglement or entrapment of an endangered snake species. Installation of an ECB with this type of netting is more labor intensive than traditional blankets. This practice is typically used with critical area planting.

Before Situation:

There are areas of concentrated flow and a grassed waterway is being installed. Soil erosion is a concern and there is little to no vegetation.

After Situation:

The erosion control blanket is placed on concentrated flow areas and secured with ground stables. Soil erosion is minimized and vegetative cover is established.

Associated Practice: 342 Critical Area Planting

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $8,941.76 **Scenario Cost/Unit:** $8,941.76

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	$37.64	16	$602.24
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.32	96	$1,950.72
Materials						
Erosion Control Blanket, biodegradable	1213	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials and shipping only.	Square Yard	$1.20	5324	$6,388.80

Practice: 484 - Mulching

Scenario: #4 - Natural Material, Soil Moisture Management

Scenario Description:

Application of straw mulch or other state approved natural material (such as wood chips, compost, or hay) to conserve soil moisture, reduce erosion, moderate soil temperature and improve soil health. Typically used to provide partial coverage (either in-row or between rows) with tree/shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Mulches applied around growing plants shall have 100 % ground cover. Thickness of the mulch shall be adequate to prevent evaporation. Payment based on total acres mulched, assuming 3-5 ft. swatch and 10-12 ft. row spacing.

Before Situation:

Site conditions vary. Typical conditions include no protective cover resulting in excessive erosion, increased soil temperature and reduced soil moisture.

After Situation:

Straw or other natural mulch is applied in rows by hand or by mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and soil health is improved.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $400.51 **Scenario Cost/Unit:** $400.51

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	$37.64	0.5	$18.82
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.32	4.2	$85.34
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	$118.54	2.5	$296.35

Practice: 484 - Mulching

Scenario: #5 - Synthetic Material, Soil Moisture Management

Scenario Description:

Installation of geotextile, biodegradable plastic, polyethylene plastic, or other state approved synthetic mulch to conserve soil moisture, reduce erosion, and moderate soil temperature. Typically used in-row with tree/shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Payment based on actual area covered by mulching material.

Before Situation:

Site conditions vary. Typical conditions include no protective cover resulting in excessive erosion, increased soil temperature and reduced soil moisture.

After Situation:

Synthetic mulch is applied in rows with a mulch layer or by other mechanized means. Soil moisture is conserved and energy use associated with irrigation is decreased.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $1,614.56 **Scenario Cost/Unit:** $1,614.56

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.32	8	$162.56
Materials						
Mulch, biodegradable plastic, 0.8 mil	1304	0.8 mil starch-based biodegradable plastic mulch, with anchoring. Includes materials and shipping only.	Square Yard	$0.30	4840	$1,452.00

Practice: 484 - Mulching

Scenario: #6 - Tree and Shrub, Individual Treatment, Soil Moisture Management

Scenario Description:

Weed barrier fabric or other suitable natural or synthetic mulch is installed with a new tree and shrub planting where planting material is not planted in rows, thus requiring each tree or shrub to be treated individually. Typically used to conserve soil moisture, reduce erosion, and moderate soil temperature. Rate is per tree/shrub and assumes 1 square yard of weed barrier fabric and 5 staples/tree. Typical scenario is an installation of 100 native trees and shrubs to enhance wildlife habitat.

Before Situation:

Site conditions vary. Sites are often remote and trees may not be planted in rows, requiring each tree to be treated individually. The lack of mulch causes reduced soil moisture requiring additional irrigation or poor growth and/or survival.

After Situation:

Weed barrier fabric squares are installed with 5 sod staples each, around individual trees and shrubs. Soil moisture is conserved and energy use associated with irrigation is decreased improving growth and survival of trees/shrubs.

Scenario Feature Measure: Number of Trees Mulched

Scenario Unit: Each

Scenario Typical Size: 100

Scenario Cost: $228.00 **Scenario Cost/Unit:** $2.28

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.28	100	$228.00

Practice: 484 - Mulching

Scenario: #7 - Natural Material, Soil Moisture Management, Seasonal High Tunnel

Scenario Description:

Application of straw mulch or other state approved natural material (such as wood chips, compost, or hay) to conserve soil moisture, moderate soil temperature and improve soil health within a Season High Tunnel. Typically used to provide 100% coverage (in-row and between rows) to suppress weeds competing with annual and perennial crops crown in the high tunnel. Mulches applied around growing plants shall have 100% ground cover. Thickness of the mulch shall be adequate to prevent evaporation.

Before Situation:

Site conditions vary. Typical conditions include no protective cover resulting in increased soil temperature and reduced soil moisture.

After Situation:

Straw or other natural mulch is applied in tightly spaced rows by hand. Soil moisture is conserved, energy use associated with irrigation is decreased, and soil health is improved.

Scenario Feature Measure: Each Seasonal High Tunnel

Scenario Unit: Each

Scenario Typical Size: 1

Scenario Cost: $43.80 **Scenario Cost/Unit:** $43.80

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	$37.64	0.5	$18.82
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.32	0.5	$10.16
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	$118.54	0.125	$14.82

Practice: 484 - Mulching

Scenario: #8 - Synthetic Material, Soil Moisture Management, Seasonal High Tunnel

Scenario Description:

Installation of geotextile, biodegradable plastic, polyethylene plastic, or other state approved synthetic mulch to conserve soil moisture, and moderate soil temperature within a Seasonal High Tunnel. Typically used in row with annual and perennial crops crown in the high tunnel.

Before Situation:

Site conditions vary. Typical conditions include no protective cover resulting in increased soil temperature and reduced soil moisture.

After Situation:

Synthetic mulch is applied in rows by hand. Soil moisture is conserved and energy use associated with irrigation is decreased.

Scenario Feature Measure: Each Seasonal High Tunnel

Scenario Unit: Each

Scenario Typical Size: 1

Scenario Cost: $80.28 **Scenario Cost/Unit:** $80.28

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	$37.64	0.5	$18.82
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.32	1	$20.32
Materials						
Mulch, polyethylene plastic, 1.0 mil	1303	1.0 mil polyethylene plastic mulch, with anchoring. Includes materials and shipping only.	Square Yard	$0.34	121	$41.14